CHEKMAREV, A.P., akademik; MELESHKO, V.I., kand.tekhn.nauk; PAVLOV, V.L., kand.tekhn.nauk; CHEKHRANOV, V.D., kand.tekhn.nauk; KARPUNIN, A.M., inzh.; CHEPELEV, P.M., inzh.

New roughing conditions on 950 blooming mills. Trudy Inst. chern. met. AN URSR 15:189-199 '61.   (MIRA 15:2)

1. Akademiya nauk USSR (for Chekmarev).
                              (Rolling mills)

CHEKHRANOV, V.D., kand. tekhn. nauk

Metallography and heat treatment of steel; new developments
in research. Stal' 22 no.6:556-557 Je '62.   (MIRA 16:7)

(Steel—Heat treatment)

S/133/62/000/006/014/015
A054/A127

AUTHOR: Chekhranov, V. D., Candidate of Technical Sciences

TITLE: At the Institut chernoy metallurgii Akademii nauk UkrSSR (Institute
             of Ferrous Metallurgy of the Academy of Sciences, Ukrainian SSR)

PERIODICAL: Stal', no. 6, 1962, 557

TEXT: When heat-treated, low-carbon steels obtain mechanical properties
which are not inferior to those of medium-carbon and many low-alloy steels, used
without heat treatment. As to the toughness reserves and weldability, they are
even better. Low-carbon steels used for rolled sections should preferably be
hardened only, without tempering. Their application reduces the weight of ma-
chines and constructions by 15 - 30%.

Card 1/1

S/133/62/000/007/005/014
A054/A127

AUTHOR: Chekhranov, V.D., Candidate of Technical Sciences

TITLE: At the Institut chernoy metallurgii Akademii nauk UkrSSR (Institute
               of Ferrous Metallurgy of the Academy of Sciences, Ukrainian SSR)

PERIODICAL: Stal', no. 7, 1962, 620

TEXT: In cooperation with the zavod imeni Petrovskogo (Plant im. Petrov-
skiy) and zavod im. V.I. Lenina (Plant im. V.I. Lenin) the effect of rare-earth
metals on the quality of carbon steel was studied. Mischmetal and ferro-cerium
were added during smelting in amounts of 0.5, 1.5, 2.0 and 2.5 kg per ton of
grade 20 low-carbon killed steel smelted in basic furnaces and used for making
tubes. The tests covered the effect of rare-earth metals on desulfurization,
ductility, macrostructure, microstructure, nonmetallic inclusions, mechanical
characterisitcs, etc. Addition of rare-earth elements reduces the amount of
gases and other impurities, and improves the quality of the ingot surface and
structure. The output of serviceable product can be increased; less labor is
required to finish the surface of the tubes when they are made of carbon steel
modified with rare-earth metals.

Card 1/1

CHEKHRANOV, V.D., kand.tekhn.nauk

Research carried out by the Institute of Ferrous Metallurgy of
the Academy of Sciences of the Ukrainian S.S.R.   Stal'   22
no.9:858   S '62.   (MIRA 15:11)
                                  (Cupola furnaces)

CHEKHRANOV, V.D., kand. tekhn. nauk

New developments in research.   Stal' 23 no.10:888 0 '63.

New developments in research.   944

New developments in research.   959   (MIRA 16:11)

DOLGOKER, Yu.P.; PASHUTIN, N.V.; ZHIGULIN, V.I., inzh.; BEDA, N.I., inzh.; RYZHKOV, P.Ya., inzh.; GAVRILOV, A.I., inzh.; CHEKHRANOV, V.D., kand. tekhn. nauk

New developments in research. Stal' 23 no.10:928-929 O '63.

(MIRA 16:11)

CHEKHUNOV, P. Kh.

KANTOR, Sh.Sh., inzhener; CHEKHUNOV, P.Kh., inzhener.

Transition to the method of washing out ash from boilers burning pulverized anthracite. Elek. sta. 24 no.12:48-49 D '53.
(MLRA 6:12)
(Furnaces)

CHEKHUNOV, V. I.

CHEKHUNOV, V. I.: "The connection of a high-speed current with a
        slight drop through an expanding transit section built on an
        incline." Min Higher Education USSR. Leningrad Polytechnic
        Inst imeni M. I. Kalinin. Leningrad, 1956. (Dissertations
        for Degree of Candidate in Technical Sciences).

SO: Knizhnays Letopis' No. 22, 1956

124-57-1-547D

AUTHOR: Chekhunov, V.I.

TITLE: The Junction of a Chute Spillway With its Tailwater by Means
            of a Divergent Transition Section Constructed on the Threshold
            of the Chute (Sopryazheniye bystrotoka s nizhnim b'yefom pos-
            redstvom rasshiryayushchegosya perekhodnogo uchastka, ust-
            raivayemogo na vodoskate bystrotoka)

ABSTRACT: Bibliographic entry on the author's dissertation for the de-
             gree of Candidate of Technical Sciences, presented to the
             Leningr. politekhn. in-t (Leningrad Polytechnic Institute),
             Leningrad, 1956

ASSOCIATION: Leningr. politekhn. in-t (Leningrad Polytechnic Institute),
             Leningrad

             1. Sluices--Design

Card 1/1

BEREZA, A.I., inzh. (Saratov); CHEKHUNOV, V.I., inzh. (Saratov)

Hydraulic system of a horizontal water-supply clarifying tank.
Vod. i san. tekh. no.6:10-12 Je '62.   (MIRA 15:7)
(Water—Purification)

BEREZA, A.I., kand. tekhn. nauk (Saratov); CHEKHUNOV, V.I., kand.
tekhn. nauk (Saratov)

Study of a whirlpool type flocculation chamber for a hori-
zontal clarifying tank. Vod. i san. tekh. no.11:3-6 N '63.
(MIRA 17:1)

PROTSENKO, P.I.; SHOKINA, O.N.; CHEKHUNOVA, N.P.

Electric conductivity and dissociation constants of alkali
metal nitrites. Zhur. fiz. khim. 38 no.7:1857-1859 Jl '64.
(MIRA 18:3)

1. Rostovskiy gosudarstvennyy universitet.

L 16327-65   EWT(m)/EPF(c)/EWP(j)/T   Pc-4/Pr-4   RM
ACCESSION NR: AP4049153   S/0190/64/006/011/2030/2034

AUTHOR: Rozenberg, B. A.; Chekhuta, O. M.; Lyudvig, Ye. B.; Gantmakher, A. R.;
Medvedev, S. S.

TITLE: Kinetics and equilibrium of the polymerization of tetrahydrofuran induced by tri-
alkyloxonium salts

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 11, 1964, 2030-2034

TOPIC TAGS: trialkyloxonium, tetrahydrofuran, block polymerization, solution polymeri-
zation, tetrafluoroborate, cationic polymerization

ABSTRACT: The kinetics of the polymerization of tetrahydrofuran, both in block and in
solution in diethyl ether, under the influence of triethyloxonium tetrafluoroborate was in-
vestigated by a dilatometric method. The characteristics of the catalyst and the initial
substances are given. The kinetic curves at different initial catalyst concentrations are
given, showing that the rate of polymerization is directly proportional to the concentration
of catalyst and is described by the equation $d[M]/dt=k_p[C_0] ([M] - [M_p])$. The rate con-
stant of the polymerization at 20C determined from the experimental data is equal to 1.66
x 10^{-2} liter/mole. sec. A study of the effect of the catalyst concentration on the molecular

Card   1/3

L 16327-65
ACCESSION NR: AP4040153

weight of the forming polymer showed that over the concentration range 0.02-0.08 mole/liter the molecular weight is inversely proportional to the catalyst concentration. Tabulated data show that at a constant concentration of catalyst (0.02 mole/liter), the molecular weight increases with increasing amount of polymerized monomer. Over a temperature range of 0-40C, the rate of polymerization, the equilibrium state and the molecular weight were found to be highly dependent on temperature. From the temperature dependence of the rate constant, the energy of activation was E-13.3 kcal/mole and the preexponential factor $A=1.64 \times 10^{-8}$ liter/mole. sec. The molecular weight decreased considerably with increasing temperature. The equilibrium concentration of the monomer during polymerization was independent of the initial concentrations of catalyst and monomer and depended only on the temperature. On the basis of this correlation, the change in enthalpy and entropy of polymerization was calculated: $\Delta H = -5.5$ kcal/mole; $\Delta S = -20.8$ cal/mole. deg. The limiting temperature of block polymerization calculated by the equation $Tc = \Delta H / \Delta S° + R \log [M_p]$ is 73C. Orig. art. has: 6 figures, 1 table and 1 formula.

ASSOCIATION: Donetskoye otdeleniye instituta organicheskoy khimii AN USSR (Donets Division of the Institute of Organic Chemistry, AN Ukr. SSR); Fiziko-khimicheskiy institut im. L. Ya. Karpova (Institute of Physical Chemistry)

Card   2/3

L 16327-65
ACCESSION NR: AP4049153

SUBMITTED: 23Jan64   ENCL: 00   SUB CODE: OC

NO REF SOV: 003   OTHER: 018

Card   3/3

BABIN, Ye.P.; CHEKHUTA, V.G.; MARSHTUPA, V.P.

Alkylation of toluene with propylene in the presence of BF$_3$ · H$_3$PO$_4$. (MIRA 17:3)
Zhur.fiz.khim. 37 no.1:68-72 Ja '63.

1. Institut organicheskoy khimii AN UkrSSR, Donetskoye otdeleniye.

ACC NR: AP6033451   SOURCE CODE: UR/0413/66/000/018/0037/0037

INVENTOR: Babin, Ye. P.; Marshtupa, V. P.; Chekhuta, V. G.; Maryshkina, L. I.

ORG: none

TITLE: Method of obtaining a pyromellitic anhydride. Class 12, No. 185892 [announced by Donets Branch of All-Union Scientific Research Institute of Chemical Reagents and Especially Pure Chemical Substances (Donetskiy filial vsesoyusnogo nauchno-issledovatel'skogo instituta khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 18, 1966, 37

TOPIC TAGS: alkyl benzene, oxidation, vanadium catalyst, pyromellitic anhydride

ABSTRACT: An Author Certificate has been issued for a method of obtaining pyromellitic anhydride by oxidation of alkyl benzenes in the vapor phase with the use of a vanadium catalyst. Diisopropylbenzene is suggested for use as the alkyl benzene. [Translation]
Card 1/1   SUB CODE: 07/SUBM DATE: 01Jun65/   UDC: 547.585'582.2.07

GANSHIN, Georgiy Aleksandrovich. Prinimali uchastiye: CHEKHUTOV, A.; KLIMOVA, M.
SHCHETININ, V.D., red.; BELYAYEV, N.A., tekhn.red.

[Economy of the Chinese People's Republic] Ekonomika Kitaiskoi
Narodnoi Respubliki. Moskva, Izd-vo IMO, 1959. 356 p.   (MIRA 12:4)

1.Sotrudniki Instituta kitayevedeniya AN SSSR (for Chekutov, Klimova).
(China--Economic conditions)

YEGOROV, K.D., kand.ekon.nauk; TROSHINA, A.P.; KOVALEV, P.P.; NOVIKOVA,
    A.A.; LAGUTINA, M.V.; VOLNINA, N.A.; SHESTAKOVA, R.V.;
    AKIMCHENKO, O.Ye.; KULEBAKIN, V.S., akademik, red.; VEYTS, V.I.,
    red.; BUTENKO, A.F., kand.filosof.nauk, red.; RYBINSKIY, M.I.,
    red.; CHASHNIKOVA, M.V., red.; NIZHNYAYA, S., red.; VOSKRESENSKAYA, T.,
    red.; CHEKHUTOVA, V., red.; RKLITSKAYA, A.D., red.; CHEPELEVA, O.,
    tekhn.red.

[Works of the State Commission for the Electrification of Russia;
documents and materials] Trudy Gosudarstvennoi komissii po elektri-
fikatsii Rossii GOELRO; dokumenty i materialy. Red.komissiia:
V.S.Kulebakin and others. Moskva, Izd-vo sotsial'no-ekon.lit-ry,
1960. 306 p.   (MIRA 14:2)

1. Russia (1917- R.S.F.S.R.) Gosudarstvennaya komissiya po
elektrifikatsii Rossii. 2. Chlen-korrespondent AN SSSR (for Veyts).
                    (Electrification)

GHEKHUTOVA,   V.

CHEKHUTOVA, V.

Financial penalties and improving constructural relations of
enterprises operating on a commercial basis. Fin.SSSR 18 no.11:36-39
N '57.   (MIRA 10:12)
              (Textile industry)   (Contracts)

VOROB'YEVA, Antonina Vasil'yevna. Prinimali uchastiye: BARANOV, D.A.,
    mladshiy nauchnyy sotrudnik; PANENKO, P.M., mladshiy nauchnyy
    sotrudnik; CHEKHUTOVA, V., red.; DANILINA, A., tekhn.red..

[Problems in economizing raw materials and supplies in industry]
Voprosy ekonomii syr'ia i materialov v promyshlennosti. Moskva,
Gos.izd-vo polit.lit-ry, 1958. 269 p.   (MIRA 12:5)

1. Institut ekonomiki AN SSSR (for Baranov, Panenko).
              (Efficiency, Industrial)

SHEYN, Pavel Abramovich; LYUBOVICH, Yu., red.; CHEKHUTOVA, V., red.;
TROYANOVSKAYA, N., tekhn.red.

[The supply of materials and equipment for socialist industrial
enterprises] Material'no-tekhnicheskoe snabzhenie sotsialisti-
cheskogo promyshlennogo predpriiatiia. Izd.2., perer. Moskva,
Gos.izd-vo polit.lit-ry. 1959. 365 p.   (MIRA 12:11)
          (Industrial procurement)

LYUKSEMBURG, Roza; MIS'KEVICH, L.R., mladshiy nauchnyy sotrudnik [translator];
    CHEKHUTOVA, V., red.; NIZHNYAYA, S., red.; CHMPELEVA, O., tekhn.red.

[Introduction to political economy] Vvedenie v politicheskuiu
ekonomiiu. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1960.   324 p.
Translated from the German.   (MIRA 13:8)

1. Institut marksizma-leninizma pri TSentral'nom komitete Kommu-
nisticheskoy partii Sovetskogo Soyuza (for Mis'kevich).
                (Economics)

MOTYLEV, Vol'f Yevnovich, prof.; Prinimali uchastiye: LEVKOSVSKIY, A.I.,
kand. ekon. nauk; PAVLOV, V.I., kand. istor. nauk; MOTYLEV,V.V.,
kand. ekon. nauk, dotsent; KONYAYEV, A.I., kand. ekon. nauk,
dotsent; CHEKHUTOVA, V., red.; STREPETOVA, M., mladshiy red.; MO-
SKVINA, R., tekhn. red.

[Economic history of foreign countries; epoch of premonopolistic
capitalism] Ekonomicheskaia istoriia zarubezhnykh stran; epokha
domonopolisticheskogo kapitalizma; kurs lektsii. Moskva, Izd-vo
sotsial'no-ekon. lit-ry, 1961.   399 p.   (MIRA 14:9)
                         (Economic history)

ZHIMERIN, Dmitriy Georgiyevich; CHEKHUTOVA, V., red.; NEZNANOV, V.,
    mladshiy red.; NOGINA, N., tekhn. red.

[History of the electrification of the U.S.S.R.] Istoriia elektri-
fikatsii SSSR. Moskva, Sotsekgiz, 1962. 457 p.   (MIRA 15:6)
                    (Electrification)

ZHIMERIN, Dmitriy Georgiyevich; CHEKHUTOVA, V., red.; NEZNANOV, V.,
    mladshiy red.; NOGINA, N., tekhn. red.

[History of the electrification of the U.S.S.R.]Istoriia elek-
trifikatsii SSSR. Moskva, Sotsekgiz, 1962. 457 p.
                                            (MIRA 16:1)
    (Electrification)   (Electric power production)

CHEKIN, A.

Cooperating with scientific technological societies. NTO 2 no.5:
25 My '60.   (MIRA 14:5)

1. Uchenyy sekretar' tekhniko-ekonomicheskogo soveta Yaroslavskogo
sovnarkhoza, g. Yaroslavl'.
                  (Yaroslavl—Technical societies)

CHEKIN, A. I.

Chekin, A. I. -- "The Question of the Activation of Drainage of the Coal-Overlaying Sands in the Deposits of the Podmoskovnyy (near Moscow) Coal Basin by Injecting Compressed Air into the Water-B aring Stratum." Min Higher Education USSR, Moscow Mining Inst imeni I. V. Stalin, Moscow, 1955 (Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis', No. 24, Moscow, Jun 55, pp 91-104

CHEKIN, A.I.

TROYANOVSKIY, Sergey Vasil'yevich; BELITSKIY, Aron Samoylovich; CHEKIN,
Arkadiy Ivanovich; BINDEMAN, N.N., otvetstvennyy redaktor; KOTLOV,
F.V., otvetstvennyy redaktor; SLAVOROSOV, A.Kh., redaktor izdatel'-
stva; ZAZUL'SKAYA, V.F., tekhnicheskiy redaktor

[Hydrogeology and drainage of mining areas] Gidrogeologiia i osushenie
mestoroshdenii poleznykh iskopaemykh. Moskva, Ugletekhizdat, 1956.
306 p.
(MLRA 10:1)
        (Mine drainage)   (Water, Underground)

CHEKIN, A.I., kand.tekhn.nauk

Accelerating the drainage of pressureless water-bearing sands
overlying coal deposits by injecting compressed air into the layer.
Nauch. trudy MGI no.18:237-252 '57.   (MIRA 11:9)
                    (Mine drainage)

TROYANSKIY, Sergey Vasil'yevich, prof.; BELITSKIY, Aron Samoylovich; CHEKIN, Arkadiy Ivanovich; SYROVATKO, M.V., otv.red.; SLAVOROSOV, A.Kh., red.izd-va; BERESLAVSKAYA, L.Sh., tekhn.red.

[General and mining hydrogeology] Obshchaia i gornorudnichnaia gidrogeologiia. Moskva. Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 391 p.   (MIRA 14:1)
    (Water, Underground)   (Mine water)

CHEKIN, A. I., kand.tekhn.nauk

Research on drying sand bearing headwater by injecting compressed
air. Nauch. trudy MGI no. 28:127-142 '59.   (MIRA 14:3)
                    (Moscow Basin—Mine drainage)

POKROVSKIY, N.M., doktor tekhn.nauk; NASONOV, L.N., kand.tekhn.nauk;
    CHEKIN, A.I., kand.tekhn.nauk; NASONOV, I.D., kand.tekhn.nauk

Concerning P.N.Paniukov's book "Engineering geology." Shakht. stroi.
7 no.7:32 Jl '63.   (MIRA 16:10)

CHEKIN, B. S.

AUTHOR: Chekin, B. S.   49-4-4/23

TITLE: On the change of "form" on reflection and refraction of a wave.
(Ob izmenenii "formy" volny pri otrazhenii i prelomlenii)

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya,
1957, No.4, pp.449-457 (USSR)

ABSTRACT: When a plane elastic wave is reflected from a plane
boundary, the angle of incidence being less than the
critical angle, the "form" of the wave does not change,
i.e. both the reflected and the refracted waves retain
the form of the incidence wave and differ from it only in
amplitude. For angles of incidence greater than the
critical value (total internal reflection) a change of
form takes place. For thin layer such a change occurs at
any angle of incidence. These effects have been considered
by Arons and Yenni (Ref.1). Petrashen' (Ref.2) has also
worked on this problem. The aim of the present work is to
try and complete the existing results. Only those media
in which longitudinal waves are propagated are considered.
Using some simple examples, the character of the change of
form which takes place in the case of total internal
reflection is studied. It is shown that the decrease of
the amplitude with depth may follow different laws depend-
Card 1/2   ing on the form of the incidence wave. New approximate

SOV/ .49-58-11-2/18

AUTHOR: Chekin, B. S.

TITLE: On the Spectrum of (Seismic) Waves Reflected and Refracted by a Stratum (O spektre voln, otrazhennykh i prelomlennykh na plastine)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 11, pp 1279-1287 (USSR)

ABSTRACT: This paper considers the propagation, damping and distortion of seismic waves originating from a point source in semi-infinite strata. Consideration is limited to longitudinal elastic spherical waves and an approximate formula (valid near the wavefront) is developed for the characteristic regeneration spectrum at an arbitrary distance from the source. The problem is further delimited by considering only three media, characterised by densities ρ_1, ρ_2, ρ_3 and wave propagation velocities a_1, a_2, a_3; the medium characterised by ρ_2, a_2 being of finite thickness h and sandwiched between the other two media which are assumed infinitely thick. The source of disturbance is located in medium ρ_3, a_3 at a depth z_0 large compared with h.

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On the Spectrum of (Seismic) Waves Reflected and Refracted by a
Stratum

The approach adopted is to resolve the disturbance
amplitude U at any point r, z (in cylindrical co-
ordinates with cylindrical symmetry) into radial and
vertical components U_r, U_z, and perform a harmonic
analysis of each component according to:

$$U_r = \sum_{n=o}^{\infty} u_{rn} \; ; \qquad U_z = \sum_{n=o}^{\infty} u_{zn}$$

(Eqs.(1) and (2) of the text).
The harmonic amplitudes u_{rn}, u_{zn} are given by the
following expressions (Eqs.3 to 9 of the text).

$$u_{ro} = \frac{1}{R_o} A \sqrt{1 - \sigma_o^2} \, \eta(\nu_o)$$

$$u_{zo} = \frac{1}{R_o} A \, \sigma_o \, \eta(\nu_o)$$

Card 2/5

On the Spectrum of (Seismic) Waves Reflected and Refracted by a Stratum

$$u_{rn} = - \frac{1}{R_n^2} \frac{1 - A^2}{A} (AB)^n \sqrt{1 - \sigma_n^2} \; \eta(\nu_n)$$

$$u_{zn} = - \frac{1}{R_n^2} \frac{1 - A^2}{A} (AB)^n \sigma_n \; \eta(\nu_n)$$

where: $a_1 \ll a_3 < a_2$, σ_n is the cosine of the angle between the z-axis and the normal to the wave-front u_n, and ν_n is the length of the internal normal from the disturbance origin to the wave-front u_n. The quantities R_n, A, B are defined by:

$$R_n^2 = \left(a_1 t + \frac{2 h n \gamma^2}{\sqrt{\sigma_n^2 - \gamma^2}} \right) \left(a_1 t + \frac{2hn\gamma^2(1-\gamma^2)}{(\sigma_n^2 - \gamma^2)^{3/2}} \right)$$

$$A = \frac{\rho_1 \sqrt{\sigma_n^2 - \gamma^2} - \rho_2 \sigma_n}{\rho_1 \sqrt{\sigma_n^2 - \gamma^2} + \rho_2 \sigma_n}$$

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On the Spectrum of (Seismic) Waves Reflected and Refracted by a Stratum

$$B = \frac{\rho_3 \sqrt{\sigma_n^2 - \gamma^2} - \rho_2 \sqrt{\sigma_n^2 - \gamma_1^2}}{\rho_3 \sqrt{\sigma_n^2 - \gamma^2} + \rho_2 \sqrt{\sigma_n^2 - \gamma_1}}$$

$$\gamma^2 = 1 - \frac{a_1^2}{a_2^2}, \qquad \gamma_1^2 = 1 - \frac{a_1^2}{a_3^2} \ ;$$

$$\eta(\gamma) = \begin{array}{l} 1 \text{ for } \nu > 0 \\ 0 \text{ for } \nu < 0 \end{array}$$

All other symbols have their standard meanings.
The significant harmonic terms of the expansion are evaluated, and the results used to assess the attenuation coefficients for some typical cases of granite strata. From these, and the phase relations between the harmonics

Card 4/5   the spectra are constructed and illustrated diagrammatically

SOV/ 49-58-11-2/18

On the Spectrum of (Seismic) Waves Reflected and Refracted by
Strata

There are 13 figures and 3 references, all of which are
Soviet.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli
(Institute of Physics of the Earth, Ac.Sc. USSR)

SUBMITTED: April 10, 1957

Card 5/5

AUTHOR: Chekin, B. S.   SOV/49-59-1-3/23
                                           of
TITLE: Reflection and Refraction/Seismic Waves at a Weak
            Separation Boundary (Otrazheniye i prelomleniye
            seysmicheskikh voln na slaboy granitse razdela)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,
            1959, Nr 1, pp 18-26 (USSR)

ABSTRACT: A solution in the form of an asymptotic series

$$\underline{u} = \sum_{k=1}^{\infty} \frac{\underline{a}^k(x,y,z)}{(i\omega)^{k-1}} \exp\left\{t - \psi(x,y,z)\right\} \qquad (1)$$

is often used, when the values of the frequency ω are
high, in dealing with dynamic problems in the theory of
elasticity.   It may happen that the expansion given
by Eq.(1) is not applicable in the region where the
parameters of the medium change vary rapidly. In some
cases the region of rapid change of properties may be
replaced by a surface $S(x,y,z) = 0$ at which the
gradients of density ρ and of Lame coefficients λ and
Card 1/3 μ change discontinuously. The present paper deals with

Reflection and Refraction of Seismic Waves at a Weak Separation   SOV/49-59-1-3/23
Boundary

reflection and refraction of elastic waves at a surface where the properties do not change too rapidly. Solutions in the regions on the two sides of the surface have to be joined to satisfy the conditions of continuity of displacement and stress. The reflected and refracted waves are produced at this surface. At sufficiently high frequencies ω only the first term of the expansion in Eq.(1) need be used. If, however, the values of ϱ, λ and μ are continuous (their gradients may be discontinuous at $S = 0$), then there is no reflection in this case and the second term of the series in Eq.(1) must be included. The first part of the present paper discusses successive approximations which include second, third, etc. terms of Eq.(1). The second part deals with waves which are reflected and refracted at a weak separation boundary between two non-uniform media at which the gradients of velocities and Lame coefficients change discontinuously. The coefficients of reflection and refraction are derived.

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                                    of   SOV/49-59-1-3/23
Reflection and Refraction/Seismic Waves at a Weak Separation
Boundary

            There are 1 figure and 5 Soviet references.

ASSOCIATION: Akademiya nauk SSSR,Institut fiziki Zemli
            (Ac. Sc., USSR, Institute of Earth Physics)

SUBMITTED: September 12, 1957

    Card 3/3

AUTHORS:Gvozdev, A. A., Chekin, B. S.

TITLE: Letter to the Editor

ABSTRACT: The author sent the following comments to the editor.
        In Nrs 1 and 2, 1959, of this journal, two articles (Refs
        1 and 2) were published on seismic waves, in which the
        coefficients of wave reflection and refraction were ex-
        pressed by two differing formulae. In the opinion of
        the authors the formulae in the second article are the
        correct ones, but a new version is suggested. There are
        2 references.

Card 1/1

CHEKIN, B.S.

> Reflection of an elastic spherical wave from a nonuniform
> half-space. Izv. AN SSSR. Ser. geofiz. no.5:711-717 My '64.
>
> (MIRA 17:6)
>
> 1. Institut fiziki Zemli AN SSSR.

CHEKIN, B.S.

Effect of slight inhomogeneity of the refracting medium on
the head wave. Izv. AN SSSR. Fiz. zem. no.3:1-10 '65.

(MIRA 18:7)

1. Institut fiziki Zemli AN SSSR.

L 23590-66   EWT(m)/EPF(n)-2/EWP(t)   JD/WW/JG

ACC NR: AP6005284   (A)   SOURCE CODE: UR/0413/66/000/001/0029/0029

INVENTOR: Kapusta, A. B.; Chekin, B. V.   39

ORG: none   B

TITLE: Method of supplying current to liquid metal. Class 18,
No. 177436   18

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
no. 1, 1966, 29

TOPIC TAGS: current supply, liquid metal

ABSTRACT: An Author Certificate has been issued describing a method
of supplying current to liquid metal. To reduce electric losses, the
current is fed to the base metal via cooled electrodes through the
intermediate liquid metal whose temperature is lower and the density
and boiling point are higher than those of the base metal.   [LD]

SUB CODE: 11/   SUBM DATE: 08Jan63/

Card 1/1 BK   UDC: 669.187.26

KRASAVTSEV, N.I. (Donetsk); CHEKIN, B.V. (Donetsk); CHEKIN, V.V. (Donetsk)

Using the magnetic method to determine the reducibility of iron
ores. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.4:
35-38 Jl-Ag '63.   (MIRA 16:10)

L 62689-65

ACCESSION NR: AP5019101   UR/0286/65/000/012/0121/0122

AUTHORS: Povkh, I. L.; Kapusta, A. B.; Chekin, B. V.

TITLE: A method for electromagnetic mixing of conductive liquids. Class 59, No. 172193

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 121-122

TOPIC TAGS: mixed flow, solenoid, magnetic field, electric field, conductive fluid, conductive fluid motion

ABSTRACT: This Author Certificate presents a method for electromagnetic mixing of conductive liquids. To increase the efficiency and to obtain technically more convenient distribution of velocities in a melt, the latter is mixed by utilizing the interaction of a uniform axial magnetic field and a nonuniform radial electric field. A solenoid, within which the vessel with the melt is placed, is used to produce the uniform axial magnetic field. To produce an electric field which is nonuniform along the height of the vessel, the latter is made in the form of a cone (see Fig. 1 on the Enclosure). Orig. art. has: 1 diagram.

ASSOCIATION: none

SUBMITTED: 17Oct63   ENCL: 01
NO REF SOV: 000   OTHER: 000   SUB CODE: ME, IE
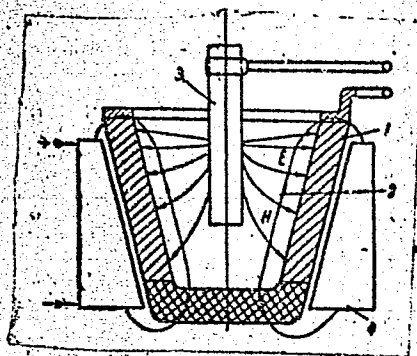
Card 1/2

L 62689-65

Fig. 1.
1- vessel with conductive walls and nonconductive bottom;
2- melt to be mixed; 3- electrode; 4- solenoid

Card 2/2

ANDRONOV, V.N.; SYROVATSKIY, E.F.; CHEKIN, B.V.

Rapid analysis of iron-containing components of partially reducible
pellets of Krivoy-Rog ores. Zav. lab. 31 no.9:1102-1104 '65.
(MIRA 18:10)

1. Donetskiy nauchno-issledovatel'skiy institut chernoy metallurgii.

CHEKIN, G.I., inzh.

Diamond burnishing. Vest. mashinostr. 44 no.8:50-52 Ag '64.

(MIRA 17:9)

L 61711-65   EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b)   IJP(c)   MJW/JD

ACCESSION NR: AP5016104

UR/0122/65/000/006/0047/0049

621.923.4:546.26-162

AUTHOR: Chekin, G. I. (Engineer)

TITLE: Diamond smoothing of hardened steels

SOURCE: Vestnik mashinostroyeniya, no. 6, 1965, 47-49

TOPIC TAGS: metal polishing, diamond smoothing, surface finishing/ 45 steel, ShKh15 steel, R18 steel, 18KhGT steel, 1K62B lathe

ABSTRACT: Smoothing the outer surfaces of cylindrical specimens of hardened steel 45, ShKh15, R18 and steel 18KhGT (HRC 50-65) by using a 1.2-mm tip radius diamond tool was experimentally investigated at MAMI. The specimens were rotated on a type 1K62B lathe at speeds up to 70 m/min and a tool feed up to 0.1 mm/rev, and profilograms were taken in the area of tool contact. It was found that the smoothing process was strongly dependent on material plastic properties, and it was determined that smoothing of hardened steel was only effective for initial finishes of class 7-10, in which case the finish increases by 2-3 classes, while for plastic materials (Kh18N9T, duralumium, etc.) finishes of class 6-5 improved to 10-11. The optimum working pressure (which produces best smoothing) was found

Card 1/2

L 61711-65

ACCESSION NR: AP5016104

to agree with

$$P_{y}\text{opt} = kH_D \left[\frac{DR}{D+R}\right]^3 \text{kg},$$

where k = coefficient = 0.013 for the given steels; H_D = surface hardness, kg/mm², Vickers; D = diameter in mm; R = tip radius of tool in mm. The experiments indicated that for the hardened steels optimum operating conditions were S = 0.02-0.08 mm/rev and 50-70 m/minute. The roughness after optimum load smoothing was found to correlate with

$$R_a = cs^t R_{a\ init}^e v^m n^u \text{micron},$$

where $R_{a\ init}$ = initial roughness height, micron; n = number of passes; the coefficients were found experimentally to be C = 0.52, t = 0.4, e = 1.05, m = 0.12, and u = -0.3. The microhardness of the samples increased by 25-38%. Tool life was 150-180 km or 35-50 hours of operation. Orig. art. has: 2 formulas and 2 figures.

burnishing

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00   SUB CODE: MM, IE

NO REF SOV: 000   OTHER: 000

Card 2/2

L 45835-66   EWT(1)

ACC NR: AP6030615   SOURCE CODE: UR/0413/66/000/016/0108/0108

INVENTOR: Torchitskiy, A. K. ; Chekin, G. I.   *39*

ORG: none   *B*

TITLE: Pulse recurrence multiplier. Class 42, No. 185111

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 108

TOPIC TAGS: pulse recurrence, logic circuit, memory cell, pulse recurrence rate, pulse repetition rate

ABSTRACT: To achieve simplicity and reliability, the proposed pulse recurrence multiplier contains an AND logic circuit whose zero inputs are connected with the outputs of the memory cells. The zero inputs of the latter are connected with the outputs of random phase pulse generators. The unit inputs of the memory cells are connected with the inputs of the device. Orig. art. has: 1 figure. [Translation]   [DW]

Card 1/2   UDC: 681.142.07
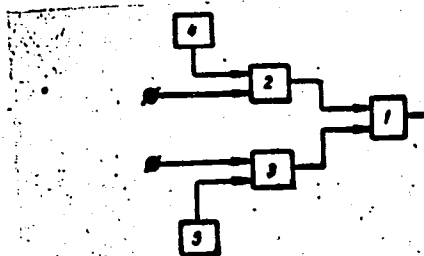
L 45835-66

ACC NR: AP6030615

0

Fig. 1. Pulse repetition multiplier.
1—Logic circuit "AND";
2 and 3—memory cells;
4 and 5—random phase pulse
generators

SUB CODE: 09/   SUBM DATE: 03Mar65/

Card 2/2

PETROV, V.P.; CHEKIN, S.S.

Conference or ancient weathering surfaces, 1962.   Kora
vyvetr. no.6:308-311 '63.   (MIRA 17:9)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii AN SSSR, Moskva.

CHEKIN, S.S.

Mineralogy of chamosite-kaolinite oolites from Lower Jurassic
argillites in the Bel'sk deposit (Irkutsk Province). Lit. 1
pol. iskop. no.1:122-127 Ja-F '65.   (MIRA 18:4)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR, Moskva.

PETROV, V.P., red.; FIN'KO, V.I.[translator]; CHEKIN, S.S.
[translator; ROMANOVICH, G.P., red.

[Problems in the geology and mineralogy of bauxites.
Translated from the English and French] Voprosy geologii
i mineralogii boksitov. Moskva, Mir, 1964. 481 p.
(MIRA 18:10)

CHEKIN, Vasiliy Aleksandrovich; SHALYBKOV, A.A., red.

[Organization of the dissemination of progressive practice
in the technical study rooms of the Central Bureau of Tech-
nological Information of the Leningrad Economic Council]
Organizatsiia propagandy peredovogo opyta v tekhnicheskikh
kabinetakh TsBTI Lensovnarkhoza. Leningrad, 1964. 47 p.
(MIRA 17:7)

GOSTEV. V.S., CHEKIN, V.F.

Electrophotometer equipped with a thermostat and its possible
use in research. Lab.delo 6 [i.e.] no.4:55-58 Jl-Ag '58 (MIRA 11:9)

1. Iz laboratorii immunokhimii (zav. prof. V.S. Gostev) Instituta
eksperimental'noy biologii AMN SSSR, Moskva.
          (PHOTOMETERS)

Kukushkin, L. I., Chekin, V. F., and Fedorov, S. F.

"Methods for measuring cerebrospinal fluid pressure and for the drainage of the ventricles of the brain." Novye khirurgicheskie apparaty i instrumenty i opyt ikh primeneniya, No. 2, 1958, p. 130

CHEKIN, V.F.; GINEVSKAYA, I.A.

Modernization of eye instruments. Vest. oft. 73 no. 3:53-54 My-Je
'60.   (MIRA 14:1)
        (EYE, INSTRUMENTS AND APPARATUS FOR)

CHEKIN, V.F.

Use of industrial electric bridge circuits for recording pressures.
Med. prom. SSSR 14 no.12:45-47 D '60.   (MIRA 13:12)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgicheskoy
apparatury i instrumentov.
                    (BRIDGE CIRCUITS)   (ELECTRONICS IN MEDICINE)

CHEKIN, V.F.; KARAPETYAN, I.S.

Stomatological instruments with a diamond coating. Stomatologiia
40 no.4:99 Jl-Ag '61.   (MIRA 14:11)

1. Nauchno-issledovatel'skogo instituta eksperimental'noy khirurgiche-
skoy apparatury i instrumehtov (dir. M.G.Anan'yev).
                    (DENTAL INSTRUMENTS AND APPARATUS)

SHORIN, V.D.; CHEKIN, V.F.; SYCHEV, Yu.V.

Diamond-tipped instruments in stomatology. Med.prom. 16 no.6:
29-30 J1 '62.   (MIRA 15:12)

1. Moskovskiy meditsinskiy stomatologicheskiy institut i Nauchno-
issledovatel'skiy institut eksperimental'noy khirurgicheskoy
apparatury i instrumentov.
            (DENTAL INSTRUMENTS AND APPARATUS)

CHEKIN, V.F.

Technical equipment in stomatological clinics in the U.S.A.
Med.prom. 16 no.6:56-59 Jl '62.   (MIRA 15:12)

1. Nauchno-issledovatel'skiy institut eksperimental'noy
khirurgicheskoy apparatury i instrumentov.
          (UNITED STATES—DENTAL CLINICS)

CHEKIN, U.I.

PHASE I BOOK EXPLOITATION   SOV/1297

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniy v narodnom khozyaistve i nauke, Moscow, 1957

Primenenie izotopov... Radioaktivnye gamma-izlucheniya. Radiometriya (Application of Isotopes... Radioactive Gamma-Radiation. Radiometry) trudy konferentsii... (Isotope Production Series) Radioactive Gamma-Radiation Facilities. Radiometry and Dosimetry) Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science) Moscow, Izd-vo AN SSSR, 1958. 293 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR; Glavnoye upravleniye po ispol'zovaniyu atomnoy energii SSSR.

Editorial Board: Dzelepov, V.I. (Resp. Ed.), Zhavoronkov, N.M. (Deputy Resp. Ed.), Leipunskiy, K.K., Alekseyev, B.A., Bochkarev, V.V., Lukhanskiy, L.I.; Maikov, T.P., Sinitsyn, V.I., and Posov, G.L. (Secretary); Tech. Ed.: Roviknov, M.D.

PURPOSE: This collection is published for scientists, technologists, persons engaged in medicine or medical research, and others concerned with the production and/or use of radioactive and stable isotopes and radiation.

COVERAGE: Thirty-eight reports are included in this collection under three main subject divisions: 1) production of isotopes, 2) high-energy gamma-radiation facilities, and 3) radiometry and dosimetry.

TABLE OF CONTENTS:

PART I. PRODUCTION OF ISOTOPES

Preisr, B.S., V.V. Bochkarev, and Ye.Ye. Kulish. Development of Isotope Production in the Soviet Union. This report is a general survey of production methods, apparatus, raw materials, application, investigations and future prospects for radio isotopes in the Soviet Union.   5

Alekseyevskiy, N.Ye., A.V. Dubrovin, O.I. Kosourov, G.P. Prudkovskiy, S.I. Filimonov, V.I. Chebotin, V.M. Shelyapin (deceased), and F.K. Shumilova. Utilization of Mass Spectrometers With a Homogeneous Field for Analyzing Isotopes of Light Elements   73

Grdenshtidze, E.O. and G.M. Zubarev. Relative Propagability of Palladium and Germanium Isotopes   78

Reno, A.M. Some Problems on the Theory of Isotope Separation   86

Overdietell, I.G. and V.K. Tsetmayya. Separation of Isotopes of Light Elements by Diffusion in Vapors   113

Barzikh, G.P., and R.Ya. Kucherov. A Diffusion Column for Separating Isotopes   122

CHEKIN, V.I.

Universal base with an anvil for stamping metal dental crowns.
Voen.-med.zhur. no.12:67-68 D '58.   (MIRA 12:12)
        (CROWN AND BRIDGEWORK,
                appar. for stamping metal crowns (Rus))

KISLOVA, Tat'yana Andronikovna; CHEKIN, V.P., dotsent, otv.red.;
    KOTLYAROV, Yu.L., red.; SARANYUK, T.V., tekhred.

[Timber supply of coal industries] Lesosnabzhenie ugol'noi
promyshlennosti SSSR. L'vov, Izd-vo L'vovskogo univ., 1959.
89 p.   (MIRA 12:10)
    (Coal mines and mining--Equipment and supplies) (Timber)

Chekin, V.V.

Category : USSR/Nuclear Physics - Instruments and Installations.   C-2
          Methods of Measurement and Investigation.

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 5782

Author   : Konstantinov, A.A., Sumbayev, O.I., ~~Chekin, V.V.~~
Inst   : All-Union Scientific Research Institute for Metrology.
Title   : Concerning Tests and Operating Modes of a Luminescent Gamma
           Spectrometer.

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 3, 347

Abstract : The average effectiveness of electron collection from the
           cathode of the FEU-19 photomultiplier is increased by approx-
           imately a factor of two by using a non-uniform voltage divider
           (in particular, one should have $U_{1-2}: U_{2-3} \approx 1:4$). The photo-
           multipliers were tested with short illumination pulses from a
           Kerr cell. Using a CsI (Tl) crystal, the resolving power (h_ν)
           $\approx$ 1 Mev), obtained for ten out of the one hundred tested
           photoelectronic multipliers with non-uniform divider was better
           than 10% (if the potential distribution is uniform, the re-
           solution obtained in all cases was worse than 15%).

Card   : 1/1

CHEKIN, V. V.

AUTHORS: Nekrasov, Z.I., Corresponding Member of the AS UkrSSR, Gladkov,
             N.A. and Chekin, V.V.

TITLE: Investigation of the Iron Ore Sintering Process by the Change
             in the Differential Magnetic Susceptibility in the Weak Field
             Region (Issledovaniye protsessa spekaniya zheleznykh rud po
             izmeneniyu differentsial'noy magnitnoy vospriimchivosti v
             oblasti slabykh poley)

ABSTRACT: The authors describe and ground the method of continuous ob-
             servation of the course of the sintering process simultaneous-
             ly throughout the entire thickness of the layer by the change
             in the differential susceptibility X of the charge and sinter
             directly in the sintering bowl. By the curves obtained, it
             is possible to establish the existence in the sintering pro-
             cess of several zones different in their magnetic state.
             Conventionally, the following zones can be singled out:
             1) the zone of the heightened magnetic susceptibility where
             the temperature rises from $300°C$ to the temperatures approach-
Card 1/2   ing the Curie point of magnetite $(575°C)$; 2) the broad non-

SOV-21-58-8-6/27

Investigation of the Iron Ore Sintering Process by the Change in the Differential Magnetic Susceptibility in the Weak Field Region.

magnetic zone whose temperature rises above the Curie point, where main sintering processes occur; 3) the zone of the cooling sinter with heightened magnetic properties; 4) the zone of sinter cooled down to temperatures below $300^{\circ}C$. It was found that the shape of the curves depends on the conditions of the course of the sintering process and the heterogeneity of the sinter in height in respect to magnetic properties. This method is new and thus far has not been applied in sinter production. There is 1 block-diagram, 1 diagram, 1 graph and 1 Soviet reference.

ASSOCIATION: Institut chernoy metallurgii AN UkrSSR (Institute of Ferrous Metallurgy of the AS UkrSSR)

SUBMITTED: March 17, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Iron ore--Sintering   2. Sintering--Applications   3. Sintering --Analysis

Card 2/2

SOV/180-59-2-15/34

AUTHORS: Gladkov, N.A., Nekrasov, Z.I. and Chekin, V.V. (Dnepropetrovsk)

TITLE: Magnetic Properties of Sinter in Relation to its Ferrous-Oxide Content (Magnitnyye svoystva aglomerata v zavisimosti ot soderzhaniya v nem zakisi zheleza)

PERIODICAL: Izvestiya akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 2, pp 86-89 (USSR)

ABSTRACT: Many investigations (eg Refs 5 and 6) have established the close relation between the FeO-content of a sinter and its properties. The present authors report their experiments to find whether a relation exists between the FeO-content and the magnetic properties. Sinters with a constant CaO/SiO_2 ratio of unity were made from roasted and magnetically-separated ores in a 200-mm diameter pot at a constant vacuum of 1200 mm water column. The moisture and carbon contents of the bed and its depth were changed to produce sinters with different properties. The magnetic properties of 50-g samples were determined with a type 2738/S-3 "ferrotester", this being followed by chemical analysis. The magnetization, proportional to the content by volume of the ferromagnetic component, was found to be the most useful. A field strength of

Card 1/3

Magnetic Properties of Sinter in Relation to its Ferrous-Oxide
Content

SOV/180-59-2-15/34

500 Oersted was used. A maximum of magnetization was
found at 19.0% FeO (Fig 1) and also at 42.5% Fe_2O_3
(Fig 2), corresponding to the maximal magnetite content.
Table 1 shows the contents of the ferruginous components
of the sinter and the calculated Fe_3O_4-contents.
Table 2 shows the relative change in the calculated
magnetite content; the change-values agree with those
calculated. This indicates that with under 19% FeO
all of it is combined in the form of magnetite; with
over 19% FeO it is the ferric oxide that is all
combined. The authors compare their results with those
of Rose and Read (Ref 2), suggesting that their own are
of more general interest. They show that magnetic
methods can give an indication of sintering conditions
and that for FeO-contents under 19% they can be used
for rapid FeO determination with an accuracy equal to

Card 2/3

SOV/180-59-2-15/34

Magnetic Properties of Sinter in Relation to its Ferrous-Oxide Content

that of chemical methods.

There are 2 figures, 2 tables and 6 references, 5 of which are Soviet and 1 English.

ASSOCIATION: Institut chernoy metallurgii AN Ukr.SSR (Institute of Ferrous Metallurgy of the AS Ukr SSR)

SUBMITTED: October 27, 1958

Card 3/3

CHEKIN, V. V., Cand Tech Sci (diss) -- "Magnetic measurements in the agglomeration of iron ore". Dnepropetrovsk, 1960. 12 pp (Acad Sci Ukr SSR, Inst of Ferrous Metallurgy), 100 copies (KL, No 12, 1960, 129)

NEKRASOV, Z.I.; CHEKIN, V.V.

Intensity of magnetization in the region of maximum magnetic
susceptibility of an agglomerate and its remanance. Dop.AN
URSR no.1:51-53 '60.   (MIRA 13:6)

1. Institut chernoy metallurgii AN USSR. 2. Chlen-korrespondent
AN USSR (for Nekrasov).
                (Iron ore--Magnetic properties)

NEKRASOV, Z.I.; CHEKIN, V.V.; ROMANOV, V.P.

Some ferromagnetic properties of an agglomerate. Dop.AN URSR no.4:
464-467 '60.
(MIRA 13:7)

1. Institut chernoy metallurgii AN USSR. 2. Chlen-korrespondent
AN USSR (for Nekrasov).
(Ferromagnetism)

CHEKIN, V.V., kand.tekhn.nauk

Physical principles of determining the magnetic properties of sinters in the average field area. Trudy Inst. chern. met AN USRS 12:79-88 '60.
(MIRA 14:5)
(Sintering)
(Ferromagnetism)

NEKRASOV, Z.I., doktor tekhn.nauk; CHEKIN, V.V., kand.tekhn.nauk;
GLADKOV, N.A.

Relation of the composition and properties of sinters to
fuel consumption. Trudy Inst. chern.met. AN URSR 12:89-
100 '60.   (MIRA 14:5)

1. Chlen-korrespondent AN USSR (for Nekrasov).
(Sintering)

CHEKIN, V.V., kand.tekhn.nauk; ROMANOV, V.P., inzh.

Investigating the process of iron ore sintering in weak magnetic fields. Trudy Inst. chern. met. AN URSR 12:101-105 '60. (MIRA 14:5)

(Sintering)
(Magnetic fields)

CHEKIN, V.V., kand.tekhn.nauk

Magnetic properties of sinters from concentrates prepared by
the roasting and magnetic separation of brown Kerch ore.
Trudy Inst. chern. met. AN UESR 12:129-134 '60.   (MIRA 14:5)
(Kerch Peninsula—Iron ores)
(Sintering)

NEKRASOV, Z.I.; GLADKOV, N.A., inzh.; CHEKIN, V.V., inzh.

Magnetic properties of sinter. made of materials with various carbon content. Stal' 20 no.6:480-491 Je '60.   (MIRA 14:2)

1. Institut chernoy metallurgii AN USSR. 2. Chlen-korrespondent AN USSR (for Nekrasov).
      (Iron ores--Magnetic properties)   (Sintering)

NEKRASOV, Z.I. (Dnepropetrovsk); CHEKIN, V.V. (Dnepropetrovsk)

Effect of a variable magnetic field on a fluidized bed of
ferromagnetic particles. Izv. AN SSSR. Otd. tekh. nauk. Met.
i topl. no.6:25-29 N-D '61.   (MIRA 14:12)

1. Institut chernoy metallurgii AN USSR.
                    (Fluidization) (Magnetic fields)

NEKRASOV, Z.I., akademik; CHEKIN, V.V.

Determining the effective viscosity of a boiling layer by the
falling ball method. Dop. AN URSR no.11:1482-1484 '61.
                                                (MIRA 16:7)

1. Institut chernoy metallurgii AN UkrSSR. 2. AN UkrSSR (for
Nekrasov).
                (Iron founding) (Viscosity)

NEKRASOV, Z.I. (Dnepropetrovsk); CHEKIN, V.V. (Dnepropetrovsk)

Effective viscosity of a fluidized bed of polydispersed
ferromagnetic particles in a variable magnetic fields. Izv.
AN SSSR. Otd. tekh. nauk. Met. i topl. no.1:56-59 Ja-F '62.
                                            (MIRA 15:2)

1. Institut chernoy metallurgii AN USSR.
            (Fluidization)
            (Viscosity)
            (Ferromagnetism)

NEKRASOV, Z.I., akademik; CHEKIN, V.V.; ROMANOV, V.P.; DUDKA, A.P.
      [Dudka, O.P.]

      Effect of a rotating magnetic field on a boiling layer containing
      ferromagnetic particles. Dop. AN URSR no.1:42-44 '62.
                                              (MIRA 15:2)
      1. Institut gornoy metallurgii AN URSR. 2. AN USSR (for
      Nekrasov).
                        (Founding)
                        (Ferromagnetism)

CHEKIN, V.V., kand. tekhn. nauk; ROMANOV, V.N., inzh.

Photometric attachment to the MIM-7 microscope. Met. i gornorud. prom. no.1:66-67 Ja-F '62.   (MIRA 16:6)

1. Institut chernoy metallurgii AN UkrSSR.
           (Microscopes)   (Photometry)

KRASAVTSEV, N.I. (Donetsk); CHEKIN, B.V. (Donetsk); CHEKIN, V.V. (Donetsk)

Using the magnetic method to determine the reducibility of iron
ores. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.4:
35-38 Jl-Ag '63.   (MIRA 16:10)

L 2508-66 EWT(1)/EWT(m) DIAAP/IJP(c)

ACCESSION NR: AP5014603 UR/0181/65/007/006/1886/1888

AUTHOR: Bobov, V. A.; Romanov, V. P.; Chekin, V. V.

TITLE: Mossbauer effect on Sn^{119} nuclei in the ferroelectric phase transition in the solid solution $Ba(Ti_{0.8}, Sn_{0.2})O_3$.

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1886-1888

TOPIC TAGS: ferroelectric material, Mossbauer effect, phase transition, Curie point, solid solution, barium compound, titanium containing alloy, tin containing alloy

ABSTRACT: The purpose of the investigation was to check by independent means the correctness of the theory that the spontaneous polarization of crystals with perovskite structure is due to the instability of some transverse normal oscillations of the low-lying optical branch. The use of the Mossbauer effect for this purpose was theoretically described by C. Musikar et al. (Phys. Stat. Sol. v. 3, K9, 1963). The authors investigated the Mossbauer absorption by Sn^{119} in polycrystalline samples of the solid solution $Pa(Ti_{0.8}, Sn_{0.2})O_3$, prepared by a usual ceramic technique, using natural tin. The 23.8 keV gamma source was Me_2Sn^{119*}

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with natural emission line width (0.38 ± 0.01) mm/sec. The source was always at
liquid-nitrogen temperature. The temperature of the investigated samples varied
from 77 to 300K. It is deduced from the anomaly of the temperature dependence of
the ratio of resonance absorption probability to the absorption probability at 300K
that near the ferroelectric region the frequency of the transverse normal oscilla-
tions of one of the optical branches does indeed decrease, but the temperature at
which this occurs is lower than the temperature corresponding to the maximum dielec-
tric constant. This difference is attributed to the fact that the phase transition
in the investigated solid solution does not occur at a clearly defined temperature,
and that the fluctuations of the composition or microinhomogeneities cause different
microscopic regions of the crystal to have different Curie temperatures. Another
possible cause of the anomaly in the Mossbauer effect is the fact that the mass of
the impurity (Sn) exceeds by more than two times the mass of the host (Ti). "The
authors thank B. I. Verkin and G. A. Smolenskiy for interest in the work and I. Ye.
Myl'nikova for preparing the samples." Orig. art. has: 2 figures.

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SUBMITTED: 16Jan65   ENCL: 00   SUB CODE: SS

NO REF SOV: 004   OTHER: 004

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L 6463-66   EWT(1)/EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/EPA(w)-2/EWP(t)/EWP(b)   DIAAP/

ACC NR: AP5025259   IJP(c)   JD/WH   SOURCE CODE: UR/0386/65/002/004/0186/0189

AUTHOR: Chekin, V. V.; Romanov, V. P.; Verkin, B. I.; Bokov, V. A.

ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk UkrSSR)

TITLE: Change in the probability of the Mossbauer effect on Sn^{119} impurity nuclei in the ferroelectric phase transition in $BaTiO_3$

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu (Prilozheniye), v. 2, no. 4, 1965, 186-189

TOPIC TAGS: Mossbauer effect, ferroelectric effect, phase transition, barium titanate, impurity center, tin containing alloy

ABSTRACT: This is a continuation of earlier work (FTT v. 7, 1886, 1965), where it was assumed that the phase transition in solid solutions of the $Ba(Ti_{0.8}Sn_{0.2})O_3$ system is considerably spread out. In the present study, the authors have investigated the probability of the Mossbauer effect on Sn^{119} impurity nuclei in the $Ba(Ti_{0.99}Sn_{0.01})O_3$ system near the ferroelectric phase-transition temperature. The introduction of so small an amount of tin impurity into barium titanate does not change its ferroelectric properties noticeably, but at the same time makes it possible to measure the resonance absorption of 23.8-kev γ quanta by the Sn^{119} impurity nuclei. The samples were prepared by standard ceramic technology, using tin oxide enriched with Sn^{119} to 65.1%. The measurements were made with a setup in which the absorber was driven at constant

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Fig. 1. Temperature dependence of the relative Mossbauer effect probability (1), dielectric constant (2), and dielectric loss tangent for the system $Ba(Ti_{0.99}Sn_{0.01})O_3$.
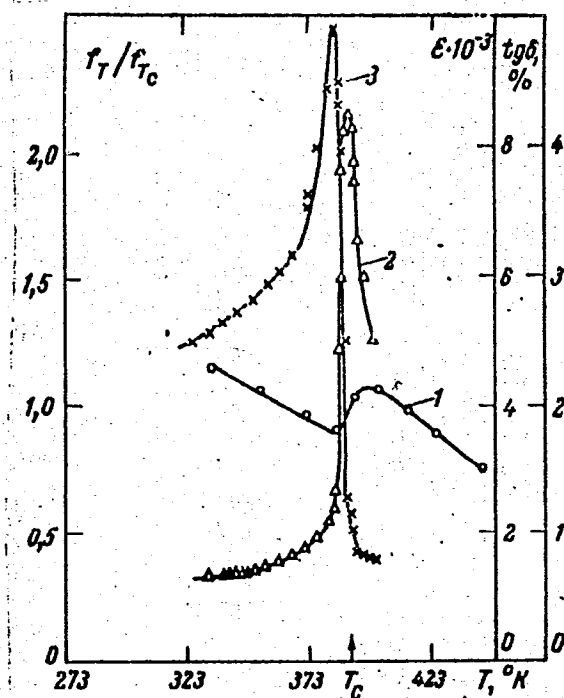
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speed by means of a mechanical cam drive. The γ-quantum source was magnesium stannide ~18 mg/cm^2 thick. Measurements were made of the temperature dependence of the relative Mossbauer-effect probability (1), of the dielectric constant (2), and of the dielectric loss tangent (3) for the system $Ba(Ti_{0.99}Sn_{0.01})O_3$ (Fig. 1). The relative probability of the effect was determined from the ratio of the areas of the absorption spectra at the given temperature to the area of the spectrum at the Curie temperature, the value of which ($T_C = 390K$) was chosen to correspond to the maximum of the dielectric constant. It is seen from the figure that the relative Mossbauer-effect probability decreases quite sharply on approaching the Curie point from the paraelectric region, passes through a minimum, and then begins to grow with decrease in temperature in the usual manner. This singularity can be attributed to the temperature dependence of the frequency of the anomalous optical branch. A comparison of the results with earlier measurements (Bokov, Romanov, and Chekin, FTT v. 7, 1886, 1965) confirms the previously advanced hypothesis that the phase transition in solid solutions of the $Ba(Ti_{0.8}Sn_{0.2})O_3$ system is considerably "smeared." Authors thank Professor G. A. Smolenskiy for continuous interest in the work, Candidate of Technical Sciences I. E. Myl'nikov for preparing the samples, and L. I. Kazakevich for help with the measurements. Orig. art. has: 1 figure.

SUB CODE: SS/   SUBM DATE: 21Jun65/   ORIG REF: 003/   OTH REF: 002

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Card 3/3

L 08169-67   EWT(m)/EWP(t)/ETI   IJP(c)   JD

ACC NR: AP6024859   SOURCE CODE: UR/0056/66/051/001/0025/0027

AUTHOR: Verkin, B. I.; Chekin, V. V.; Vinnikov, A. P.

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TITLE: Effect of impurities on isomer shifts in metallic tin

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 1, 1966, 25-27

TOPIC TAGS: tin, Mossbauer effect, nuclear isomer, low temperature research, absorption spectrum, line width, impurity center, nuclear resonance

ABSTRACT: To check whether it is correct to ignore the changes in the properties of the host in studies of the Mossbauer effect, the authors have determined the isomer shifts for Sn^{119} in natural (metallic) tin to which Na, Zn, Cd, Ge, In, Sb, Pb, or Bi was added as an impurity. The source of the resonant γ radiation was Mg_2Sn^{119*}; the source and absorber were maintained at liquid-nitrogen temperature. In all cases the absorption spectra consisted of singlet lines with half-widths that did not differ appreciably from those of pure tin having the same thickness. The shift was determined from the difference in the counting rate at source velocities corresponding to the maximum slope of the pure-tin absorption line, and was also checked by determining the absorption-line center of gravity for the impure tin. The spectra show that a relatively small amount of impurity has some effect on the density of the s-electrons in tin nuclei. However, the impurities do not all have the same effect with regard to

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ACC NR: AP6024859

isomer shifts. Within the limits of experimental error, the presence of Ge, Pb, In, Sb, or Bi in tin has no effect on the isomer shift. With Zn or Cd, the isomer shift is enhanced, and starting with a concentration ~0.5 at.% the shift remains approximately constant at 0.06 ± 0.02 mm/sec. The pattern is similar for Na, but the isomer shift lies systematically between the shifts for pure tin and tin doped with Zn or Cd. It is proposed on this basis that the impurity changing the isomer shift is the one having valence s-electrons. Consequently, when the properties of metal lattices are investigated by the Mossbauer effect for impurity atoms, the impurity concentration cannot be chosen arbitrarily in the general case. The authors thank L. S. Kukushkin for a discussion of the results, and P. N. Aleksandrov for providing the pure metal samples.

Orig. art. has: 2 figures and 1 formula.

SUB CODE: 20/   SUBM DATE: 21Jan66/   OTH REF: 003

Card 2/2 nst

L 24385-66   EWT(m)/EWP(t)   DIAAP/IJP(c)   JD
ACC NR: AP6010972   SOURCE CODE: UR/0056/66/050/003/0534/0536

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temperatur Akademii nauk Ukrainskoy SSR)

TITLE: Isomeric shifts at the Sn-119 nuclei in electronic compounds
of the copper-tin system

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50,
no. 3, 1966, 534-536

TOPIC TAGS: tin, copper alloy, nuclear isomer, conduction band,
Mossbauer effect, line shift, electron mobility

ABSTRACT: The purpose of the investigation was to use the isomer
shift to trace the filling of the conduction band of the copper by
the valence electrons of the tin, and to check on changes in the mag-
netic, thermal, and electric properties of the alloy accompanying the
filling of the various energy bands. The alloys were prepared from

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high-purity components in an argon atmosphere and exposed to reso-
nance gamma radiation from $MgSn_2$ source to determine the isomer
shift by means of the Mossbauer effect. The α, β, γ, ε, and η phases
of the alloys were investigated. The absorption spectra were sym-
metrical singlet lines. A plot of the isomer shift against the tin
content shows that in the region of the α phase and near the start
of the β phase the isomer shift decreases somewhat, while in the
region of the β phase it begins to increase linearly to the η phase.
This can be understood by taking into account the large concentra-
tions and mobilities of the conduction electrons of the copper. The
isomer shift for the phases has a negative sign relative to the
metallic tin, thus indicating large filling of a number of the s-
states of the tin in the alloy. It is noted that the Cu-Sn system is
apparently the first among the systems with a nonlinear dependence of
the isomer shift on the concentration, and the nonlinearity is at-
tributed to the fact that the covalent bonds begin to play a more
dominant role here, whereas in other systems the metallic bond pre-
dominates. Orig. art. has: 1 figure.

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